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EXTRA-CANTONMENT ZONE SANITATION.

CAMP SHELBY, NEAR HATTIESBURG, MISS.¹

By J. A. WATKINS, Passed Assistant Surgeon, United States Public Health Service, Officer in Charge.

The United States Public Health service has, by a cooperative agreement with existing state and local health authorities, assumed charge of sanitation and the control of communicable diseases within the zone around Camp Shelby near Hattiesburg, Miss. In carrying out this arrangement an officer of the United States Public Health Service has been made the legally authorized agent of the State board of health of the State of Mississippi, and, by executive action of this board, has been delegated all legal authority possessed by the State board of health under existing laws of the State of Mississippi. For administrative purposes he has been given the title of Director of Health, Civil Sanitary District.

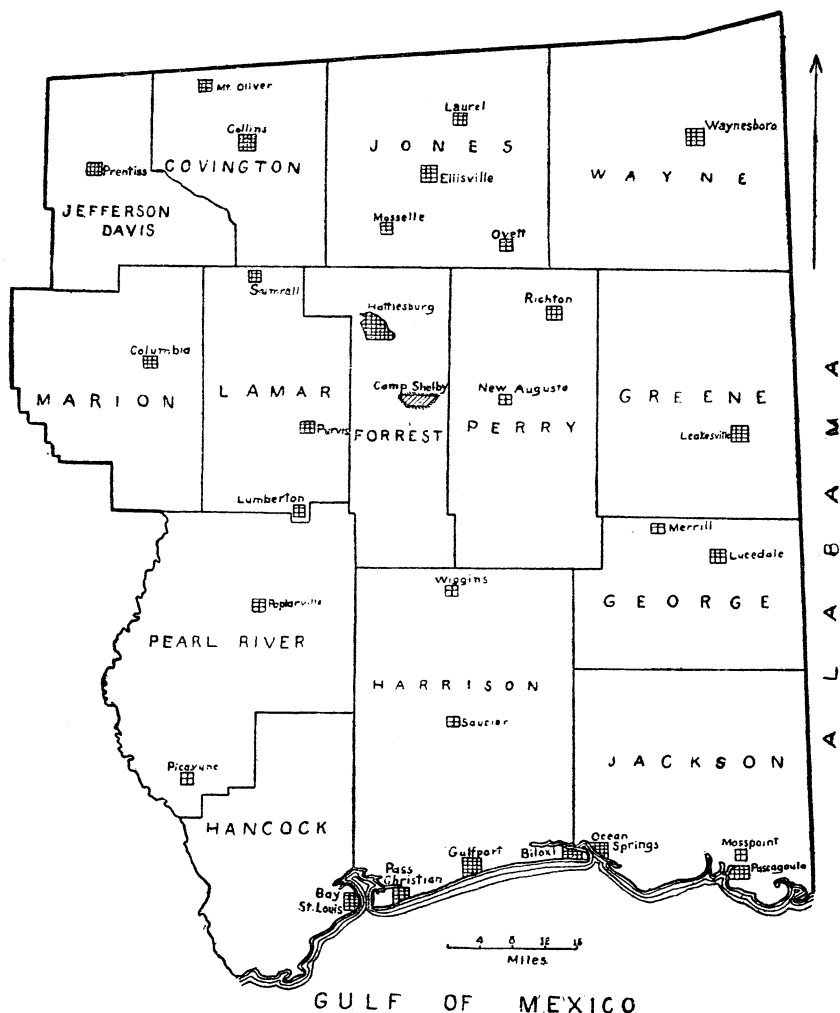
Area Comprising Extra-Cantonment Zone.

No definite limitations can be arbitrarily made for an extra-cantonment zone. While for administrative purposes it is desirable to have the boundaries of such a zone coincide with those of the several civil jurisdictions comprising the area, such boundary lines can not be strictly adhered to where sanitary control measures must be prosecuted in order to render an area safe for troops. The extra-cantonment zone around Camp Shelby has been considered, for the purposes of public health administration, as comprising that area which, because of means of communication, transportation, origin of food stuffs, or any other factor, has a bearing either directly or indirectly upon the state of the health and bodily welfare of the troops. An area tentatively set aside for this purpose comprises the 14 southernmost counties of Mississippi; that is, those counties south of Jasper county, east of Pike county, west of the Alabama State line, and north of the Gulf. The estimated population of this zone is 239,000. For administrative purposes this area is divided into three zones, termed zones No. 1, No. 2 and No. 3.

¹ In cooperation with the Army and the respective State and local authorities the United States Public Health Service has undertaken the sanitary control of the civil zones around 26 of the Army mobilization camps and cantonments. The zone around Camp Shelby is one of these.

Zone No. 1.—This is an area surrounding the camp site and not less than one mile wide at any point. On the north of the camp this zone is 11 miles wide, and includes the city of Hattiesburg.

Zone No. 2.—An area surrounding the above described area, approximately a distance of 20 miles from the camp.



The area around Camp Shelby under special health administration.

Zone No. 3.—The area of the counties enumerated above not included in zones 1 and 2.

In zone No. 3 activities are limited to (1) the sanitary regulation of the production and shipment into zone No. 1 of all food products; (2) the prompt receipt of all information regarding the prevalence of disease, and (3) the close cooperation with the health officers, of the respective civil jurisdictions involved, in all pertinent health

matters. An exception was made in the case of Harrison County, on the Gulf Coast, where there are many frequented resorts. Between these resorts and Hattiesburg there is much communication by travel and the shipment of food products (mainly sea food). The importance of safeguarding the health of soldiers visiting these localities was strongly represented to the Harrison County board of supervisors, who agreed to appoint a trained whole-time officer and in other ways to provide means for the protection of the public health. There had long existed in the county a public sentiment in favor of such a provision.

Activities in zone No. 2 are the same as those carried on in zone No. 3 except that closer attention is given to this area. This is especially true as regards the observation and control of communicable diseases. The area is intended to include all surrounding small towns, railroad stations, lumber-mill settlements, and farming centers within one day's usual foot or vehicle travel. While funds and personnel have not as yet permitted active prosecution of sanitary measures in these localities, sanitary surveys are made of them, and their condition, so far as it relates to the health of the troops, is communicated to the military authorities in order that they may possess information relative to the environs of the camp.

In zone No. 1 every branch of public health activity is being prosecuted. In the following discussion the activities referred to relate to this zone, and particularly to Hattiesburg, in which 98 per cent of the population of the zone resides.

The Sanitary Problems Existing at the Time the Public Health Service Took Charge.

1. *Malaria*.—The following extracts are quoted from a report of Sanitary Engineer J. A. Le Prince, of the United States Public Health Service, on the malaria situation in the area:

Malaria prevails in the area in which Hattiesburg and Camp Shelby are situated. Anopheles are easily found, and conditions at present are favorable to the spread of this disease. The situation is serious. * * * The topography of the zone is such as to offer abundant opportunity for the breeding of mosquitoes. * * *

In streams, roadside ditches, and pools examined, larvæ of Anopheles were abundant. *A. quadrimaculatus* is the species most commonly found. * * *

The serious nature of this sanitary problem can be understood by a study of the morbidity reports for Forrest County for the years 1914-1916.

Malaria.	Total number of cases.	Case rate per annum per 1,000 population	Estimated population.
1914	1,705	81.901	22,000
1915	2,108	101.851	22,000
1916	2,049	99.049	22,000

Disposition of human excreta.—Sanitary sewerage facilities were in use by about 28 per cent of the population of Hattiesburg, and were available to an additional 6 per cent. The remainder of the population, or about 66 per cent, were supplied with outside surface privies, many in a grossly insanitary condition. In the surrounding rural districts, surface privies and to some extent pit closets were in use.

Milk problems.—There were but 2 or 3 so-called dairies within this area. Milk, however, was sold or disposed of by a large number of the people. Within the city of Hattiesburg alone there were 635 cows being milked. Many households in the city kept a cow each which supplied the needs of the households. Surplus milk was disposed of to neighbors and friends. Nevertheless, Hattiesburg had in the past never completely supplied its own requirements and milk had been shipped into the town from surrounding districts, at times even from so distant a point as Illinois. The milk problem, therefore, was two-fold, first, the acquisition of a safe supply, and, second, the acquisition of an adequate supply.

Meat.—There were in the town three distributing stations of large packers and interstate shippers of meat. They supplied at this time, about 30 per cent of the meat consumed in the area. Seventy per cent of the meat sold was slaughtered and disposed of without regulation or restriction of any kind.

Places of business handling foodstuffs.—Many restaurants, eating houses, soda fountains, fruit stands, meat markets, cafés, and similar places of business were being conducted in the insanitary manner usual in the absence of official regulation. Among the insanitary conditions most frequently met were the lack of screens, inadequate or unsuitable facilities for the cleansing of utensils, improper disposition of garbage and waste, inadequate or insufficient storage facilities for foodstuffs, and general uncleanness.

Manufacture of ice cream and other milk products.—There existed two ice cream manufactories and one creamery, while a number of persons carried on similar activities on a small scale. In the ice cream plants neither sterilization of cans or utensils nor pasteurization or refrigeration of milk was carried on, and there was no protection from flies or other means of contamination. The one creamery in town was under the supervision of a man well informed in this line of business, and conscientious in the performance of his duties. Due to lack of cooperation, however, he was unable to conduct the creamery in the manner he desired.

Soft drink bottling.—There existed two bottling works in which soft drinks were manufactured and distributed. As conducted, these places were a sanitary menace.

Garbage disposition.—The garbage and refuse disposal of the population of this city had been in the past attempted by a civilian sani-

tary inspector, supplied with one horse-drawn vehicle and two negro laborers.

Water supply.—The water supply of the city is derived from driven wells, of a depth of about 400 feet. This source supplied approximately 47 per cent of the population, and was available to an additional 3 per cent. Of the remaining half of the population, about 12 per cent obtained water from 3 or 4 flowing artesian wells, and 38 per cent from shallow dug wells.

Health organization.—There existed at this time a very recently appointed part-time health officer, who served both Forrest County and the city of Hattiesburg, at a salary of \$1,500 per annum. There was in addition a sanitary inspector, at a salary of \$85 per month. In addition, the duties of one of the three commissioners included public health and sanitation, and upkeep of streets.

Reporting diseases.—Though an admirable percentage of the registered physicians reported the cases of communicable diseases occurring in their practices, the reports were made only once a month. Reporting at such infrequent intervals was of course of little service in the local control of the communicable diseases.

Special sanitary problems.—The sudden and large increase in population in a sparsely settled area and small town, coincident with the establishment of a cantonment, brings about a number of important public health problems, in addition to those previously existing. Among these are: The establishment of civilian labor camps, the strain placed on public utilities, and scarcity of labor and materials. The construction of a cantonment requires the immediate employment of a large number of civilian laborers. It is necessary that they live in close proximity to the camp site, which is usually a number of miles from the nearest town.

These laborers, each with a span of mules or a team of horses, came from the surrounding country. All walks of life were represented. They encamped in the unsettled area adjoining the cantonment.

The encampment, on such an unprepared site, of from 10,000 to 20,000 persons of this character, with as many animals, presented a sanitary problem of major importance. The problems of the disposition of human excreta; safe water supply; disposition of manure, garbage, and refuse; the proper drainage and general camp sanitation; the early recognition and reporting of the communicable diseases; and the taking of necessary precautions to prevent their spread require a constant and large amount of work. The sudden and comparatively great increase in population in Hattiesburg (almost 100 per cent) placed so great a strain upon public utilities, such as gas, water, electricity; the sewerage, garbage, and refuse collection system; streets; public buildings, toilets, etc., that existing facilities proved entirely inadequate to meet these unusual demands.

Established restaurants, hotels, eating places, barber shops, and all such places of business were suddenly submerged by a volume of business for which they were unprepared and which they were not equipped to handle. During this time they were unable to maintain the required sanitary conditions and methods. This was particularly noticeable at public eating places and barber shops and at railroad stations.

Enlargement of the premises and installation of facilities and improvements to meet sanitary requirements and at the same time to take care of the increased volume of business, called for much additional labor, equipment, and material. These could not be had readily. Particularly scarce at this time was skilled labor, such as carpenters, plumbers, and other artisans. Machinery and apparatus were difficult to obtain or have shipped. Coal, lumber, and finished wood were scarce and costly.

In addition to the problems above enumerated the establishment of a camp is followed by a large floating population who establish many places of amusement and dispose of food to soldiers. Small sandwich stands spring up here and there over the entire area; soft drinks, ice cream, fruit, and other foodstuffs are sold promiscuously. Not being of a permanent nature, no provisions for sewerage connections or permanent screening, adequate washing or cleansing facilities, water supply, or other necessities for the maintenance of sanitary conditions, are provided for. The handling of these mushroom growths presents a problem which requires a great deal of time and is the source of much petty trouble.

Another problem of considerable importance met with in this work was the lack of a general public sentiment in favor of better public health conditions and the absence of knowledge on the part of the community as to the necessity for the acquisition and maintenance of a rigid control and for the adoption of measures for the prevention of the spread of communicable diseases. While, of course, as in other localities, the more educated and cultured residents of this area appreciated the need for sanitary improvements, the bulk of the population did not. Difficulty was experienced at times in assuring some that the rigid enforcement of the rules and regulations pertaining to public health were in fact not only necessary under existing conditions, but aimed toward the permanent good of the community. Such a state of the public mind was illustrated when there occurred an unusual prevalence of measles. The lack of information regarding the means by which communicable diseases are spread was demonstrated by the common plea, in attempting to evade quarantine, that the character of the case reported was mild. The lax methods of the past in the reporting of

diseases were made evident by the fact that approximately only 50 per cent (estimated) of the cases occurring were reported.

The lax quarantine methods of the past were demonstrated by the almost universal attempt to evade requirements of the existing laws. There seemed to be a general impression that these laws, having never in the past been enforced, it was not necessary to enforce them at the present time. Another factor having a direct bearing upon the matter in point is the economic condition of the community. Owing to the disintegration of the lumber industry in this particular area the economic conditions of Hattiesburg and its immediate environs were not good. The expense involved in meeting sanitary requirements, owing to the scarcity and cost of labor and material, was at times high. This made difficult the acquisition and maintenance of sanitary requirements.

Present Organization.

The present organization consists of a commissioned officer of the Federal Public Health Service, in charge, having for executive purposes the title of Director of Health, Civil Sanitary District; two additional commissioned medical officers of the United States Public Health Service; a part-time city and county health officer; and one Red Cross unit composed of 3 sanitary inspectors, 1 bacteriologist, 1 laboratory attendant, 3 public health nurses, a business manager, and 1 clerk. There are in addition 1 chief sanitary inspector of the United States Public Health Service; 2 sanitary inspectors; and a number of laborers and miscellaneous employees. For administration purposes the activities are divided into divisions.

Funds Available.

The city of Hattiesburg, through its commissioners, agreed to bear the expenses actually incurred in making the sanitary conditions of the city of Hattiesburg and its immediate environs safe for troops. Forrest County, through the board of supervisors, appropriated \$7,000 for the prosecution of sanitary measures in the county, exclusive of Hattiesburg; the American Red Cross, through the Bureau of Sanitary Service, appropriated \$10,000, to be expended under the direction of the officer in charge, for the salaries and expenses of the personnel of the Red Cross unit and the care of the indigent sick of importance from a public-health standpoint, and for the purchase of nonexpendable materials and equipment.

The United States Public Health Service has allotted an initial sum in addition to the salaries and expenses of the officers stationed here.

House to House Inspection.

Immediately upon assuming charge, a house to house canvass was made by a corps of inspectors, who filled in a questionnaire card. These cards give all pertinent data regarding sanitary and health conditions of the premises. They are filed by wards, sections, streets, and numbers. From the original cards a separate index system is carried on, in which water supply, sewage disposal, and other items of information are recorded. This is filed in such a manner as to be available for prompt reference.

The data are available at this office, and are of immense value in the control of communicable diseases and the prosecution of necessary sanitary measures.

System of Morbidity Reporting.

A basic requirement for the control of communicable diseases is the possession by the health authorities of information as to when, where, and under what conditions communicable diseases occur. Toward this end the cooperation of the practicing physicians was enlisted. In addition, the State board of health issued an executive order requiring all physicians to report to this office. The county health officers of each of the 13 counties within the extra-cantonment zone report to this office by mail, telephone, or telegraph, depending upon the importance of the matter, the occurrence of the more important communicable diseases, or any event relating to the public health of the area.

Every registered and licensed physician within zone 1, and the greater part of zone 2, i. e., all of Forrest County, makes a daily report to this office of the occurrence of the following diseases: Chicken pox, anthrax, Asiatic cholera, dengue, diphtheria, dysentery, (a) amebic, (b) bacillary, filariasis, German measles, gonococcus infection, hookworm disease, measles, malaria, meningitis, mumps, paratyphoid fever, plague, pneumonia, poliomyelitis, smallpox, scarlet fever, septic sore throat, syphilis, trachoma, trichinosis, tuberculosis, typhoid fever, typhus fever, whooping cough, and yellow fever. Card forms are furnished for the purpose.

Upon receipt of the reports by this office they are turned over to a clerical force, whose duty it is to classify and record same and present the accumulated data and information to the officer in charge, in the form of report, by means of spot maps, charts, plats, curves, and other graphic or clerical methods. The cards are also given over to a medical officer who makes epidemiological investigations of communicable diseases. Proper precautions are then taken to prevent spread of these diseases.

A daily morbidity report of the entire area is issued from this office, copies being sent to the Surgeon General, United States Public

Health Service, to the State and local health officers, and to the division sanitary officer of Camp Shelby. In addition, daily morbidity and mortality reports are received from the division sanitary officer of Camp Shelby.

Mosquito Eradication Measures.

The mosquito-breeding areas were, for the purpose of instituting measures of eradication, tentatively divided into two parts; first, those in and within flight range of Hattiesburg, and, second, those in and within flight range of Camp Shelby proper.

The problems presenting themselves within the camp itself were handled by the Army.

The breeding areas in Hattiesburg and within flight range of Hattiesburg were dealt with by the United States Public Health Service, while those within flight range of Camp Shelby were dealt with cooperatively by the Army and the United States Public Health Service, utilizing separate workmen and funds but coordinating the work so as to procure the best results in the most rapid and economical manner.

In the ditching work the usual procedure and the approved type of ditching, according to the special problems presenting themselves, were carried out. Oiling operations were carried on, using a truck on which was mounted a 200-gallon tank for the general distribution of oil, and by trained negroes supplied with knapsack sprayers. Drips were also employed where necessary.

The major portion of the work—that of channeling and cleaning of ditches, cutting of new ditches, and drainage of breeding areas—has been completed. Over 60 miles of ditches have been dug and channeled and more than 50 ponds or swamp areas of various sizes drained. Water courses breeding *Anopheles* have been cleaned. Three weeks before the first killing frost, Entomologist C. W. Metz was unable to find *Anopheles* larvæ within this area. In carrying out this work there have been expended 3,418 man days and 2,603 gallons of oil have been used.

Though the mosquito season is over, eradication measures are now being prosecuted to the extent of channeling and rechanneling certain large drainage ditches, the cutting of brush, and the removal of obstacles from water courses, preparatory to the more detailed and careful measures which will be instituted in the early spring after the winter rains. There are at present employed in this work 20 men and 2 foremen, operating under the supervision of Asst. Surg. L. L. Williams, jr.

The antimosquito measures have in the past been directed primarily against *A. quadrimaculatus*. As the eradication of natural breeding places neared completion, this species was found breeding

in artificial containers. To prevent the breeding of this species and to accomplish the eradication of *Culex* and other species, measures were directed toward the abolishment of artificial breeding places. The ordinance appended was passed by the city authorities and has proved satisfactory.

SECTION 1. It shall be unlawful to have, keep, maintain, cause or permit, within the incorporated limits of Hattiesburg, Miss., any collection of standing or flowing water in which mosquitoes breed or are likely to breed, unless such collection of water is treated so as to effectively prevent such breeding.

SEC. 2. The collections of water considered by section 1 of this ordinance shall be held to be those contained in ditches, ponds, pools, excavations, holes, depressions, open cesspools, privy vaults, fountains, cisterns, tanks, shallow wells, barrels, troughs (except horse troughs in frequent use), urns, cans, boxes, bottles, tubs, buckets, defective house roof gutters, tanks of flush closets, or other similar water containers.

SEC. 3. The method of treatment of any collections of water that are specified in section 2, directed toward the prevention of breeding of mosquitoes shall be approved by the health officer and may be any one of the following:

(a) Screening with wire netting of at least 16 meshes to the inch each way or any other material which will effectually prevent the ingress or egress of mosquitoes.

(b) Complete emptying every seven days of unscreened containers, together with their thorough drying or cleaning.

(c) Using a larvicide approved and applied under the direction of the health officer.

(d) Covering completely the surface of the water with kerosene, petroleum, or paraffin oil once every seven days.

(e) Cleaning and keeping sufficiently free of vegetable growth and other obstructions, and stocking with mosquito-destroying fish; absence of half-grown mosquito larvæ to be evidence of compliance with the measure.

(f) Filling or draining to the satisfaction of the health officer.

(g) Proper disposal of tin cans, tin boxes, broken or empty bottles, and similar articles likely to hold water and tin cans and tin boxes must have a hole punctured in the bottom.

SEC. 4. The natural presence of mosquito larvæ in standing or running water shall be evidence that mosquitoes are breeding there, and failure to prevent such breeding within three days after notice by the health officer shall be deemed a violation of this ordinance.

SEC. 5. Should the person or persons responsible for conditions giving rise to the breeding of mosquitoes fail or refuse to take necessary measures to prevent the same within three days after due notice has been given to them, the health officer is hereby authorized to do so, and all necessary costs incurred by him for this purpose shall be a charge against the property owner or other person offending as the case may be.

SEC. 6. The health officer shall enforce the provisions of this ordinance, and for this purpose the health officer, person or persons acting under his authority may at all reasonable times enter in and upon any premises within his jurisdiction; and any person or persons charged with any of the duties imposed by this ordinance failing within the time designated by this ordinance or within the time stated in the notice of the health officer, as the case may be, to perform such duties, or to carry out the necessary measures to the satisfaction of the health officer, shall be deemed guilty of violation of this ordinance, and for each day after the expiration of this time that said person fails to comply with this ordinance shall be deemed guilty of a separate violation of this ordinance.

SEC. 7. The person held under this ordinance to be responsible for the correction of conditions on premises giving rise to or likely to give rise to breeding of mosquitoes, shall be the owner, and in his absence the agent of owner of said premises; provided, any tenant, causing or permitting said conditions without the consent of the owner or agent shall be held responsible. Where a trespasser or other person is known to cause or to have caused said conditions without the consent of owner, agent, or tenant, then such person will be held responsible.

SEC. 8. Any person who shall violate any provision of this ordinance shall on each conviction be subject to a fine of not more than \$25, or be imprisoned for not more than 10 days, or both, in the discretion of the court. All acts or parts of acts in conflict with this ordinance are hereby repealed.

SEC. 9. The public interest requiring it, this ordinance shall take effect and be in force from and after its passage and approval.

Passed and approved the 1st day of September, 1917.

Disposal of Human Excreta.

Starting on September 5, and as rapidly thereafter as the clerical force permitted, notices were issued to property owners to install a sanitary can in surface privies on their premises. The installation of these sanitary cans has proceeded satisfactorily. About 0.1 per cent of the privies yet remain in an insanitary condition.

A scavenger system of 3 trucks and 2 wagons has been placed in operation. The trucks carry clean empty cans which are substituted for those removed. When loaded the trucks haul to the disposal plant.

The construction of a disposal plant was found necessary to meet the requirements for disposition of the contents of the sanitary cans. A large hopper was set upright in a block of cement approximately 6 feet square, hollowed out to fit the hopper. The hopper is the same height as a wagon bed, and is fitted with a coarse screen. The whole equipment is suitably housed and connected with the sewer system of the town and suitably located. Continuous water flow through the hopper, sprays for the washing of the cans, and hose connections for the proper flushing down of the premises were installed. The contents of the cans are dumped directly into the sewer through the hopper after having been taken from the truck and placed on the platform.

On September 3 the city of Hattiesburg issued bonds, and from the money thus obtained appropriated \$7,500 for the extension of the sewer system. By this extension about 2 per cent additional of the population will be supplied with sewer connections.

The toilet facilities provided by the local railroad depots were found to be entirely inadequate to meet the demands of the sudden and large increase in the population and traveling public. There were no other public toilet facilities in the city. Through cooperation with the railroad companies it has been possible to provide adequate toilet facilities at most of the railroad stations.

One public convenience station for each of the sexes has been established in Hattiesburg, and sanitary drinking fountains have been placed on various street corners within the city.

Sanitary Regulation of Production and Distribution of Milk.

All persons disposing of milk, in any quantity, whether sold, bartered, or given away, have been classified as dairymen and regulated according to existing laws or special sanitary requirements deemed necessary because of the present unusual conditions in the area.

Every such person is required to file in this office an application for license to dispose of milk or milk products. On these applications, data such as the number of cows, amount of milk disposed of, and other pertinent information are given. As rapidly as the personnel permits the places are inspected by a milk-market expert or a graduate veterinarian assigned to dairy and milk inspection, and the blank forms are filled in.

If in the opinion of the inspector sanitary conditions of the dairy permit the production and distribution of milk in a safe manner, such distribution is allowed to proceed. Directions and suggestions for sanitary changes and improvements are given at this time. All places of business disposing of milk in large quantities to homes or in quantities to the public eating houses, soda fountains, etc., are subjected to frequent and careful inspection. Samples of milk for bacterial examination and determination of butter fat and adulterations are made at frequent intervals. Bacteria counts are generally made 10 times a month. Milk entering Camp Shelby is examined bacteriologically each day. The milk sold in the zone at present is of good quality, running high in butter fat and low in bacterial counts. Much of it is equal to the standard of certified milk sold in urban communities. An endeavor has been made to divert much of the milk produced in the surrounding areas and previously shipped to New Orleans to the local creamery, where under proper regulations it is now being pasteurized and bottled and sold under very satisfactory conditions. By education and persuasion, by the employment of farm demonstration agents and milk-market experts and by other activities the milk supply in this zone has been successfully increased, notwithstanding the rigid sanitary control. There has been a marked and universal improvement in the sanitary condition under which milk is produced in this area.

Regulation of Slaughtering and Sale of Meat.

The meat sold from the stations of interstate shippers in this area is, of course, subject to Federal inspection at the time of shipment. An inspection of this meat, however, is made to detect

putrefaction. It is a regrettable fact that much meat has had to be condemned and thereby lost, at a time when the conservation of this product is urgent, because of improper refrigeration systems which have caused the meat to become unfit for human consumption. All meat, as well as other perishable food products, is inspected before being shipped to Camp Shelby. An attempt has been made to inspect all locally butchered meat, but the difficulties presenting themselves have to some extent been insurmountable. The farmers and other people slaughter when and where they desire, bring the meat to the city and sell it, frequently without the knowledge of this office. Arrangements are now being made whereby it is hoped that these undesirable conditions will be removed. These arrangements consist of the construction and operation of a municipally-owned abattoir where animals may be slaughtered and meat refrigerated and distributed at actual cost to the butchers. As soon as the abattoir is completed, laws will be passed prohibiting the sale of meat not bearing the stamp of a meat inspector, and all meat killed at farms must pass through the abattoir accompanied by the necessary viscera, to aid the meat inspector in determining the state of health of the animal so slaughtered.

The abattoir and pen will be situated on a 20-acre plat near a railroad and within the city limits, and will be built and conducted in conformity with the rules and regulations of the Bureau of Animal Industry at a cost approximately of \$15,000.

Hotels, Restaurants, Cafés, Etc.

All places of business disposing of foodstuffs of any kind to the public are subjected to a daily inspection by a sanitary inspector of this office. A score card on which are enumerated the various sanitary requirements, each requirement being awarded a certain numerical value, is used, and a weekly average is thus arrived at, based on a daily score. Proper clerical methods are in force for the recording of the data. Pertinent facts are brought to the attention of the officer in charge. When a place of business presents a general average below 75 it is closed until the necessary sanitary requirements are met.

Soda fountains are as a rule inspected twice daily. Running hot and cold water, or whirling brush sprays, are required to provide adequate washing and cleansing facilities for utensils. Milk is handled only by milk pumps.

Ice Cream and Milk Food Products.

The manufacture of ice cream in one place of business was discontinued and a new building constructed. Alterations of the other factory in compliance with requirements have been made. The requirements consist in the main of impervious flooring, permanent

and adequate screening; steam sterilization of utensils, washing and toilet facilities for employees, and pasteurization of all milk used. Daily bacterial counts are made of the products of these factories. Milk food products are manufactured at the local creamery under daily inspection and rigid sanitary regulations. Proceeding as rapidly as personnel and equipment permit, all employees of such places of business where foodstuffs are handled will be examined for typhoid carriers, and be required to possess a clean bill of health from a recognized physician.

Hucksters and Stands Prohibited.

In the extra-cantonment zone of Camp Shelby (Zone No. 1) there has been absolute prohibition of the sale of all foodstuffs in any manner or in any form to the public from carts, wagons, stands, or other temporary or improvised arrangements. All places of business must in this area be suitably housed, properly equipped, and all necessary arrangements and appurtenances for the acquisition and maintenance of sanitary conditions must be supplied.

Garbage, Waste, Refuse.

There have been about two carloads of garbage cans sold in the city since August 17. Residents are encouraged to make proper disposition of garbage and refuse, and a system of garbage collection has been instituted, the efficiency of which is rapidly improving. There are employed for this purpose 3 trucks and 3 wagons, with 9 employees.

Many of the residents in this community dispose of waste food products to chickens, hogs, and other animals. Municipal disposal at present is made at a crematory which was previously in disuse and in need of repairs and alterations.

Street Police Work.

A street washer, with a force pump operated by a gasoline engine, has been purchased, with which all paved streets are washed. A "White wing" system has been inaugurated.

Water Supply.

As rapidly as the personnel and equipment permit, the water supplies other than the city supply, which has shown no contamination, are being examined bacteriologically for pollution.

Vaccinations.

It was the desire to take advantage of the opportunities presenting themselves for the immunization of as many of the population as possible against typhoid fever and smallpox. To this end the

United States Public Health Service offered these facilities free of charge to the public.

Medical Examination of School Children.

With a view to both the control of communicable diseases and the establishment of a very desirable and necessary public-health activity, a system of medical examination of school children has been inaugurated under the immediate direction of Acting Assist. Surg. C. E. Gibbs. In the institution and prosecution of this work the procedure followed by the United States Public Health Service in school hygiene in other localities has been followed.

Laws and Regulations Pertaining to Public Health.

No ordinance or regulation is legal in the State of Mississippi which is in conflict with existing State laws pertaining to public health.

In this work, therefore, existing State laws have been followed. The city of Hattiesburg has no ordinances of importance pertaining to public health. The city has the commission form of government, and can not under the particular form of commission granted try or have jurisdiction over violators of the State sanitary laws. Such cases must be tried before a justice of the peace.

An attempt has been made in this area to obtain sanitary requirements under existing State sanitary laws. It appears better, under local conditions, to operate under existing laws, even though defective, until after an adequate time has elapsed to allow peculiar local conditions to adjust themselves and an opportunity has presented itself for careful thought and conservative passage of such laws. Work has been prosecuted with the idea of enforcing existing laws even though they be defective, and obtaining desired conditions by appeal to civic pride and patriotism and by other means, rather than by the passage of numerous new laws, to which there might possibly be objection, with lack of cooperation, and of which there certainly would be much ignorance.

The desirability of taking advantage of the present situation in placing upon the statutes desirable laws pertaining to public health has not been overlooked, and will at the proper time be attended to.

Public Health Nursing.

As stated above, American Red Cross nurses have been assigned to public health work. The homes of the indigent sick are visited with a view to determining the quantity and kind of material aid which should be rendered. In this work a questionnaire is filled in and specific recommendations are made by the nurse to the officer in charge as to the steps that in her opinion should be taken.

These cases are cared for either with the American Red Cross funds allotted to this unit for this purpose, or in a cooperative manner, with the local chapter of the Red Cross and the Kings Daughters, churches, and civic organizations. The uninformed are instructed as to the ways and means of prevention of the spread of disease; rigid bedside sanitation is instituted and carried out in the home. The care and feeding of infants is given attention and professional services are rendered. This service was particularly needed in this area and has proved a very valuable adjunct to the work of rendering the area safe for troops.

Public Health Laboratory.

There has been established a small, though completely equipped laboratory, in which various activities connected with public health administration are carried on. Particular attention is given to bacteriological examinations of milk, ice cream, water, and all food products. Examinations are made for carriers; diagnoses are cleared up, and the early recognition of infectious diseases is facilitated.

Control of Venereal Diseases.

In cooperation with the Army and the American Red Cross, measures are being inaugurated for the establishment of control measures as regards the venereal diseases. It is proposed to establish one or more dispensaries where early treatment will be given to infected persons. In connection with the work of the dispensary it is intended to provide for the hospitalization or other proper treatment of carriers. The cooperation of local practitioners will be obtained in the work. Salvarsan and other remedies will be distributed to physicians free of cost. Bacteriological and serological examinations will be made.

Permanency of Results.

It is intended that the result of this work will not only be to render the zone safe for troops and the civil population during the time when unusual conditions prevail, but to leave a system of adequate health conservation in the zone after the present military necessity for such work shall have disappeared; and to leave here a sentiment for better public health administration and to demonstrate its advantages in such a manner as to create a public sentiment which will make available the necessary funds and personnel for the maintenance of sanitary conditions. It is hoped to leave here a skeleton health organization adequate to meet the conditions at ordinary times and as many material acquisitions appertaining to public health activities as possible.